

THE CAPCO INSTITUTE
JOURNAL
OF FINANCIAL TRANSFORMATION

OPERATIONS

Sailing on a sea of uncertainty: Reflections
on operational resilience in the 21st century

SIMON ASHBY

20
YEAR ANNIVERSARY

**OPERATIONAL
RESILIENCE**

#53 MAY 2021

THE CAPCO INSTITUTE

JOURNAL OF FINANCIAL TRANSFORMATION

RECIPIENT OF THE APEX AWARD FOR PUBLICATION EXCELLENCE

Editor

Shahin Shojai, Global Head, Capco Institute

Advisory Board

Michael Ethelston, Partner, Capco

Michael Pugliese, Partner, Capco

Bodo Schaefer, Partner, Capco

Editorial Board

Franklin Allen, Professor of Finance and Economics and Executive Director of the Brevan Howard Centre, Imperial College London and Professor Emeritus of Finance and Economics, the Wharton School, University of Pennsylvania

Philippe d'Arvisenet, Advisor and former Group Chief Economist, BNP Paribas

Rudi Bogni, former Chief Executive Officer, UBS Private Banking

Bruno Bonati, Former Chairman of the Non-Executive Board, Zuger Kantonalbank, and President, Landis & Gyr Foundation

Dan Breznitz, Munk Chair of Innovation Studies, University of Toronto

Urs Birchler, Professor Emeritus of Banking, University of Zurich

Géry Daeninck, former CEO, Robeco

Jean Dermine, Professor of Banking and Finance, INSEAD

Douglas W. Diamond, Merton H. Miller Distinguished Service Professor of Finance, University of Chicago

Elroy Dimson, Emeritus Professor of Finance, London Business School

Nicholas Economides, Professor of Economics, New York University

Michael Enthoven, Chairman, NL Financial Investments

José Luis Escrivá, President, The Independent Authority for Fiscal Responsibility (AIReF), Spain

George Feiger, Pro-Vice-Chancellor and Executive Dean, Aston Business School

Gregorio de Felice, Head of Research and Chief Economist, Intesa Sanpaolo

Allen Ferrell, Greenfield Professor of Securities Law, Harvard Law School

Peter Gomber, Full Professor, Chair of e-Finance, Goethe University Frankfurt

Wilfried Hauck, Managing Director, Statera Financial Management GmbH

Pierre Hillion, The de Picciotto Professor of Alternative Investments, INSEAD

Andrei A. Kirilenko, Reader in Finance, Cambridge Judge Business School, University of Cambridge

Mitchel Lenson, Former Group Chief Information Officer, Deutsche Bank

David T. Llewellyn, Professor Emeritus of Money and Banking, Loughborough University

Donald A. Marchand, Professor Emeritus of Strategy and Information Management, IMD

Colin Mayer, Peter Moores Professor of Management Studies, Oxford University

Pierpaolo Montana, Group Chief Risk Officer, Mediobanca

John Taysom, Visiting Professor of Computer Science, UCL

D. Sykes Wilford, W. Frank Hipp Distinguished Chair in Business, The Citadel

CONTENTS

OPERATIONS

08 Collaborating for the greater good: Enhancing operational resilience within the Canadian financial sector

Filipe Dinis, Chief Operating Officer, Bank of Canada

Contributor: **Inderpal Bal**, Special Assistant to the Chief Operating Officer, Bank of Canada

14 Preparing for critical disruption: A perspective on operational resilience

Sanjiv Talwar, Assistant Superintendent, Risk Support Sector, Office of the Superintendent of Financial Institutions (OSFI)

18 Operational resilience: Industry benchmarking

Matt Paisley, Principal Consultant, Capco

Will Packard, Managing Principal, Capco

Samer Baghdadi, Principal Consultant, Capco

Chris Rhodes, Consultant, Capco

24 Decision-making under pressure (a behavioral science perspective)

Florian Klapproth, Professorship of Educational Psychology, Medical School Berlin

32 Operational resilience and stress testing: Hit or myth?

Gianluca Pescaroli, Lecturer in Business Continuity and Organisational Resilience, and Director of the MSc in Risk, Disaster and Resilience, University College London

Chris Needham-Bennett, Managing Director, Needhams 1834 Ltd.

44 Operational resilience approach

Michelle Leon, Managing Principal, Capco

Carl Repoli, Managing Principal, Capco

54 Resilient decision-making

Mark Schofield, Founder and Managing Director, MindAlpha

64 Sailing on a sea of uncertainty: Reflections on operational resilience in the 21st century

Simon Ashby, Professor of Financial Services, Vlerick Business School

70 Operational resilience

Hannah McAslan, Senior Associate, Norton Rose Fulbright LLP

Alice Routh, Associate, Norton Rose Fulbright LLP

Hannah Meakin, Partner, Norton Rose Fulbright LLP

James Russell, Partner, Norton Rose Fulbright LLP

TECHNOLOGY

80 Why cyber resilience must be a top-level leadership strategy

Steve Hill, Managing Director, Global Head of Operational Resilience, Credit Suisse, and Visiting Senior Research Fellow, King's College, London

Sadie Creese, Professor of Cybersecurity, Department of Computer Science, University of Oxford

84 Data-driven operational resilience

Thadi Murali, Managing Principal, Capco

Rebecca Smith, Principal Consultant, Capco

Sandeep Vishnu, Partner, Capco

94 The ties that bind: A framework for assessing the linkage between cyber risks and financial stability

Jason Healey, Senior Research Scholar, School of International and Public Affairs, Columbia University, and Non-Resident Senior Fellow, Cyber Statecraft Initiative, Atlantic Council

Patricia Mosser, Senior Research Scholar and Director of the MPA in Economic Policy Management, School of International and Public Affairs, Columbia University

Katheryn Rosen, Global Head, Technology and Cybersecurity Supervision, Policy and Partnerships, JPMorgan Chase

Alexander Wortman, Senior Consultant, Cyber Security Services Practice, KPMG

108 Operational resilience in the financial sector: Evolution and opportunity

Aengus Hallinan, Chief Technology Risk Officer, BNY Mellon

116 COVID-19 shines a spotlight on the reliability of the financial market plumbing

Umar Faruqui, Member of Secretariat, Committee on Payments and Market Infrastructures, Bank for International Settlements (BIS)

Jenny Hancock, Member of Secretariat, Committee on Payments and Market Infrastructures, Bank for International Settlements (BIS)

124 Robotic process automation: A digital element of operational resilience

Yan Gindin, Principal Consultant, Capco

Michael Martinen, Managing Principal, Capco

MILITARY

134 Operational resilience: Applying the lessons of war

Gerhard Wheeler, Head of Reserves, Universal Defence and Security Solutions

140 Operational resilience: Lessons learned from military history

Eduardo Jany, Colonel (Ret.), United States Marine Corps

146 Operational resilience in the business-battle space

Ron Matthews, Professor of Defense Economics, Cranfield University at the UK Defence Academy

Irfan Ansari, Lecturer of Defence Finance, Cranfield University at the UK Defence Academy

Bryan Watters, Associate Professor of Defense Leadership and Management, Cranfield University at the UK Defence Academy

158 Getting the mix right: A look at the issues around outsourcing and operational resilience

Will Packard, Managing Principal, and Head of Operational Resilience, Capco



DEAR READER,

Welcome to this landmark 20th anniversary edition of the Capco Institute Journal of Financial Transformation.

Launched in 2001, the Journal has followed and supported the transformative journey of the financial services industry over the first 20 years of this millennium – years that have seen significant and progressive shifts in the global economy, ecosystem, consumer behavior and society as a whole.

True to its mission of advancing the field of applied finance, the Journal has featured papers from over 25 Nobel Laureates and over 500 senior financial executives, regulators and distinguished academics, providing insight and thought leadership around a wealth of topics affecting financial services organizations.

I am hugely proud to celebrate this 20th anniversary with the 53rd edition of this Journal, focused on 'Operational Resilience'.

There has never been a more relevant time to focus on the theme of resilience which has become an organizational and regulatory priority. No organization has been left untouched by the events of the past couple of years including the global pandemic. We have seen that operational resilience needs to consider issues far beyond traditional business continuity planning and disaster recovery.

Also, the increasing pace of digitalization, the complexity and interconnectedness of the financial services industry, and the sophistication of cybercrime have made operational disruption more likely and the potential consequences more severe.

The papers in this edition highlight the importance of this topic and include lessons from the military, as well as technology perspectives. As ever, you can expect the highest caliber of research and practical guidance from our distinguished contributors. I hope that these contributions will catalyze your own thinking around how to build the resilience needed to operate in these challenging and disruptive times.

Thank you to all our contributors, in this edition and over the past 20 years, and thank you, our readership, for your continued support!

A handwritten signature in black ink, appearing to read 'Lance Levy', with a stylized, flowing script.

Lance Levy, **Capco CEO**

SAILING ON A SEA OF UNCERTAINTY: REFLECTIONS ON OPERATIONAL RESILIENCE IN THE 21ST CENTURY

SIMON ASHBY | Professor of Financial Services, Vlerick Business School

ABSTRACT

This paper reflects on operational resilience in the 21st century world of transboundary crises. Transboundary crises cross borders, including geographic and organizational boundaries and beyond. In so doing, transboundary crises can have surprising, even unique, consequences, atypical in both their nature and severity. In the case of COVID-19, the crisis spread rapidly from the biological world into politics, markets, and operations/supply chains, almost stopping the beating heart of our global economy. This paper proposes a capability-based framework for thinking about operational resilience in the face of transboundary crises. This framework incorporates formal and informal elements, along with a combination of pre-crisis planning and in-crisis adaptation. The idea is to maintain flexibility, while avoiding unstructured chaos. The case of Texan supermarket chain H-E-B is used to illustrate the framework. Though not from the financial services sector, there is much that financial organizations can learn from its example.

1. INTRODUCTION

"She stood in the storm and when the wind did not blow her away, she adjusted her sails," Elizabeth Edwards.

No one predicted the year that was 2020. It is true that the World Economic Forum [WEF (2020)] identified infectious diseases as an emerging global risk; however, the probability and impact of this risk was rated well below the then more immediate concerns of environmental issues (e.g., global warming) and cyber attacks. Many financial services organizations were unprepared, along with the vast majority of non-financial organizations and governments for that matter. Worse, the world was faced with unprecedented decisions and outcomes. Never have lives and livelihoods been disrupted so significantly, for so long, and on a global scale. As early as April 2020, the International Monetary Fund (IMF) predicted an economic impact larger than the Great Depression of the 1930s [Goparth (2020)], predictions that only worsened as time, national lockdowns, and international travel restrictions continued [Williams (2020)].

COVID-19 is the latest in a series of "transboundary crises" [Boin (2019)], a 21st century crisis phenomenon that crosses borders, often from the natural world into human-made environments and vice versa. The transboundary nature of crises like COVID-19 means that they can have unexpected, even surprising or catastrophic effects. Effects that far exceed those of apparently similar crises in the past. In the case of COVID-19, the virus crossed from the traditional pandemic domain of biological science, deep into the worlds of politics, economics, business operations, supply chains, and financial markets. The problem was that uncertainty about the virus translated into even greater uncertainty for organizations and their stakeholders, especially as governments took increasingly drastic measures to combat the spread, all but stopping the economies of many nations and significantly restricting the freedoms of their citizens.

The experiences of financial services organizations during the pandemic have echoed those of non-financial ones. Some have struggled to maintain the continuity (and profitability) of their operations, amidst the apparent social and economic

chaos of the pandemic. Others have thrived. It is tempting to differentiate this success or failure on the basis of an organization's ability to resist, respond to, and recover from shocks – a common interpretation of operational resilience [Annarelli and Nonino (2016)]. However, what if resistance and recovery are impossible? What if the operations of an organization, and potentially its strategic objectives, are changed irrevocably? In these contexts, success does not mean returning the organization back to its steady state, but helping it to adapt to a new state, potentially one less steady and predictable than before.

In this paper, I revisit the concept of operational resilience. I argue that if financial (or non-financial) services organizations are to survive and thrive in the 21st century world of transboundary crises, new thinking and practice is required. The key to this thinking and practice is a blend of the old and the new. Traditional planning and long-established risk management tools and processes are essential, but not sufficient. They must be complemented by less structured and less formal (human, social, and cultural) arrangements that help financial services organizations to adapt and learn. Financial services organizations must sail the sea of uncertainty in a robust vessel, but they have to change tack when the situation demands. The captain of the Titanic learned that lesson the hard way, and it seems that some financial services organizations, and their leaders, are still learning it in a similar way today.

The next section outlines a framework for implementing effective operational resilience, building on past research in the area. This framework is designed to help financial services organizations plan for, adapt to, and learn from the changing world around them. Section three applies this framework to a real-world pandemic success story: Texan grocer-retailer H-E-B, a case from which financial services organizations have much to learn. The paper ends with a short conclusion and recommendations for practice in organizations.

2. UNDERSTANDING OPERATIONAL RESILIENCE IN ORGANIZATIONS

The term resilience is a “conceptual umbrella” [Masten and Obradović (2007)] that is assigned different meanings depending on the context [Bhamra et al. (2011), Linnenluecke (2017)]. From an operational (managerial) perspective, resilience is not an outcome, but a process for achieving desirable (value increasing) outcomes in the face of “challenging conditions” [Sutcliffe and Vogus (2003), Vogus and Sutcliffe (2007), Weick et al. (1999)], including internal

crises, external shocks, the progressive build-up of stresses and strains, competitive disruption, or any other form of significant and unexpected change. Operational resilience activities are an attempt to organize uncertainty, akin to risk management [Power (2007)], though unlike day-to-day “riskwork” [Power (2016)], there is little that is routine.

Given that challenging conditions come and go, there is a strong temporal element to operational resilience activities. Ponomarov and Holcomb (2009) identify three main stages:

- Readiness and preparedness (before)
- Response and adaptation (during)
- Recovery or adjustment (after)

Reflecting on these stages, past research distinguishes planned (i.e., pre-challenge) from adaptive (during and after the challenge phase) resilience [Darkow (2019)]. Planned resilience involves anticipation, readiness, and preparedness and emphasizes pre-programmed responses, though this is not an exclusive emphasis. Research into planned resilience focuses on recovery and getting back to “normal”, so is most effective in relatively stable organizational environments [Darkow (2019)]. In contrast, adaptive resilience is about responding to change as it unfolds (e.g., real-time learning from mistakes) and may involve adjusting to a new environment [Bhamra et al. (2011)].

It is tempting to think of adaptive resilience as unplanned and unstructured, even chaotic. However, effective adaptation does not imply an absence of planning, merely an acceptance that effective planning need not involve pre-determined responses or outcomes [Vogus and Sutcliffe (2007)]. Hence, effective operational resilience should combine elements of planning and adaptation [Comfort et al. (2001), Darkow (2019), Wildavsky (1988)]. In combining the two, organizations can achieve “recovery resilience” [Boin and van Eeten (2013)], a sustainable operational state that allows them to adapt, on a continuous basis, to an increasingly uncertain and changing world [Darkow (2019)].

How then to combine planning and adaptation and achieve optimum recovery resilience? What sort of capabilities do organizations require to help them prepare for, respond to, and learn from the unexpected? Here, a second stream of research sheds light on these questions and explores the interrelationships between the formal (structural) and informal (human-social) elements of operational resilience in organizations [e.g., Barasa et al. (2018), Koronis and Ponis (2018)].

Figure 1: Capability-based framework for effective operational resilience

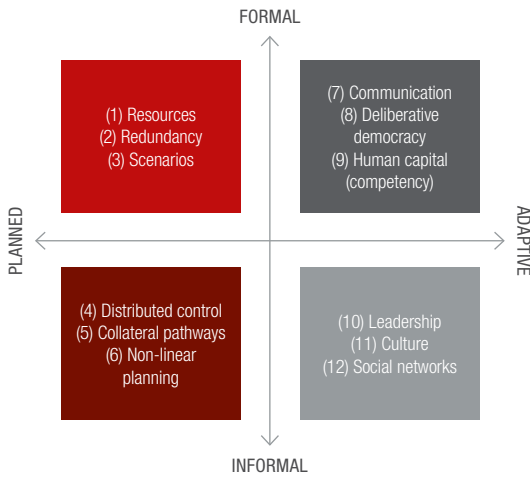


Figure 1 is an attempt to visualize a capability-based framework for effective operational resilience in the face of modern transboundary crises. The basis for this framework is threefold:

1. Operational resilience requires a harmonious blend of people, processes, and systems.
2. Organizations must prepare for, and respond to, challenging conditions through planning, adaptation, and learning without necessarily knowing in advance what will occur [Vogus and Sutcliffe (2007)].
3. The twelve capabilities are illustrative and not intended to be exhaustive. There is no “best practice” approach to the design or combination of resilience capabilities. How one organization blends specific capabilities will differ from another. That said, there should always be a combination of planning and adaptation with formal and informal elements.

2.1 Planned and formal capabilities for operational resilience

The primary aim of planned and formal capabilities is to create an adequate level of physical or financial “slack” in the system. This will include imagining different types of challenging conditions to help create “deterministic” slack, as well as preparing for unimagined situations through the creation of “non-deterministic” slack. Deterministic slack has a specific application, such as an accounting provision or a backup internet connection. Non-deterministic slack can be applied to a wider range of situations. Maintaining a general cash reserve or surplus capital requirements are examples of non-

deterministic slack, as are “fog” computing systems found in “smart” buildings and next generation mobile communication infrastructures [Moura and Hutchinson (2020)].

1. All organizations require resources to operate and most will maintain some degree of surplus resource. This is especially the case in industries like financial services. Resilient organizations should ensure that they have sufficient financial (cash or credit) and physical resources for both normal and abnormal operating environments. This could range from contingency finance arrangements to stockpiling vital components and equipment, such as personal protective equipment (PPE) or virus testing kits.
2. Redundancy is an extension of maintaining “excess” resources and involves the development and maintenance of sites, systems, or equipment that are not necessary in normal operations (e.g., spare office space or manufacturing capacity, a continuity site, or multiple internet and data backups).
3. Scenario planning helps organizations ensure that core functions continue to operate and to help protect their supply chain from disruption. The results from scenario analysis work can be used to support other planned measures, such as resource planning, or to test adaptive tools like information cascades. Effective scenario planning need not involve imagining specific (deterministic) situations. Techniques such as reverse-stress testing allow organizations to analyze the point at which their operations, business plans, or finances become non-viable [ICAEW (2020)].

2.2 Planned and informal capabilities of operational resilience

Planned and informal capabilities are used to improve the flexibility of resilience planning. Planned flexibility is not fully adaptive in the strictest sense of the word, but can still allow for an element of adaptation. Usually, outcomes are determined in advance (e.g., returning operations to the previous steady state, rather than some “new normal”), while flexibility is created in terms of the response. Hence, though the destination may be fixed, planned and informal capabilities allow different routes to be taken for the journey.

4. Distributed control is a form of governance that is decentralized and non-hierarchical [Arghandeh et al. (2014)]. The aim is to empower staff to develop bottom-up solutions to problems, rather than relying on a slower and less flexible top-down response. Effective distributed control requires clear statements (policies

and procedures) on the circumstances and situations where decisions may be taken outside the conventional hierarchy and what should be escalated. Training may also be required to help staff understand these policies and procedures.

5. Collateral pathways involve using different routes to achieve a goal [Barasa et al. (2018)]. The aim is to find an alternative route or course of action when an established system, process, or procedure is unavailable. Authorized workarounds may be planned in advance, or staff may be empowered to implement unforeseen workarounds if required. The use of distributed control and non-linear planning can improve the ability of an organization to find collateral pathways.
6. Non-linear planning [Barasa et al. (2018)] incorporates feedback loops when responding to change, allowing a degree of dynamism through iteration and trial and error. The idea is to act quickly and then to reflect on the outcome, adjusting the response as necessary.

2.3 Adaptive and formal capabilities of operational resilience

Adaptive and formal capabilities are tangible mechanisms that support the development of what Sutcliffe and Vogus (2003) term “conceptual slack”. The idea behind conceptual slack is that multiple, diverse human perspectives and experiences lead to better outcomes during challenging conditions. This is because diversity stimulates open-minded debate and allows for new responses to be developed. Conceptual slack facilitates flexibility and allows organizations to accept and adjust to the changing world around them.

7. Timely, accurate, and complete information is essential, both in terms of detecting and responding to challenging conditions. Formal communication structures must be created in advance to help manage information flows (e.g., escalation processes, reporting systems, committees, information cascades, etc.), but how the information is used should not be specified in advance. It is for the relevant decision-makers to decide, during the response and adaptation (during) phase, how to respond to the information they receive.
8. Deliberated democracy can be used to promote fair and reasonable discussion over simple majority voting. The aim is not to “win” a debate, but rather to share information and ideas and to build trust, motivation, and commitment [Harris et al. (2018)].

9. Human capital is an important element of adaptive resilience [Lengnick-Hall et al. (2011)]. Organizations that are comprised of skilled and experienced (i.e., competent) staff should be better able to adapt to change and develop to new ways of working. The adaptive resilience of human capital can be enhanced through the recruitment of people with diverse skills, professional backgrounds, and experience. Training and education can also be used to enhance skills diversity and to promote mechanisms like deliberated democracy.

2.4 Adaptive and informal capabilities of operational resilience

The final group of capabilities are linked to the behavioral process of “mindful organizing” [Vogus and Sutcliffe (2007)]. The aim is to create a group mind, whereby the people that comprise an organization are able to cooperate and coordinate their actions. Thinking as one, but benefitting from the synergies that come with diverse perspectives, skills, and experiences. Mindful organizing involves people developing, refining, and updating a collective, shared understanding of challenging conditions. One that can help them respond to, recover from, and potentially exploit the new normal they find themselves in.

10. The capabilities and styles of leadership can affect operational resilience in several ways. One element is leadership style (e.g., autocratic versus democratic and facilitative), which may reinforce or weaken more planned capabilities like deliberated democracy or distributed control. Another relates to the ability of a leader to create and maintain a shared vision to help support motivation and collaboration. Leaders may also help promote “emotional ambivalence”, a reinforcing component for mindful organizing [Vogus et al. (2014)] that helps people to think creatively. Emotional ambivalence combines contradicting feelings of doubt and hope and helps to balance feelings of confidence and caution (both of which are necessary emotions when faced with challenging conditions).
11. Organizational culture (and risk culture) influences the response to challenging conditions. Cultural factors might include the collective ability of staff to view change as an opportunity rather than a threat or how groups react to unexpected change (e.g., denial versus acceptance). Willingness to think creatively is another potential factor, as is “pro-social” motivation [Vogus et al. (2014)], which encourages people to think of others and work together towards a common good. This links culture to the final capability: social networks.

12. Social networks play a major role in strengthening (or weakening) operational resilience [Tisch and Galbreath (2018)]. The more fragmented the network, the less resilient an organization is likely to be. In contrast, a socially integrated group of people, supported by an appropriate organizational culture and high levels of trust, can respond quickly and adaptably to a wide range of challenging conditions.

3. THE CASE OF H-E-B

H-E-B is a privately-owned supermarket chain based in San Antonio, Texas. The chain has around 340 stores across Texas and northeast Mexico. H-E-B was ranked number 12 on Forbes' list of "America's largest private companies". The supermarket chain was praised for its response to the early phases of the COVID-19 pandemic. While other retailers floundered, H-E-B was able to maintain supply chains and cope with sudden changes in consumer demand, while at the same time keeping their staff and customers as safe as possible from infection [Solomon and Forbes (2020)].

H-E-B's success illustrates the value of combining planning and adaptation with the formal and informal. Many years ago, H-E-B learned that the hindsight of past incidents provides a window of foresight for those prepared to look into what their organizational resilience (or lack of) could be [Meyer (1982)]. H-E-B maintains a permanent state of emergency preparedness, led by a team of full-time specialist staff. This includes keeping emergency supplies (water, fuel, medicines, etc.) in almost every warehouse (a planned and formal capability), allowing them to react quickly to a range of crises, whether extreme weather or a pandemic. In addition, H-E-B have been developing and refining their emergency preparedness plans for over 15 years. The H1N1 swine flu virus in 2009 provided them with a "window into the future", by which to learn key insights about ensuring product supply chains and that the employees were resilient to the challenges COVID-19 would eventually bring to their organization. As early as the second week of January 2020, the chain's personnel were establishing what worked and what did not across the supply chains of all the major countries affected by the pandemic and making sure their local communities were resourced correctly (a planned and informal capability).

In addition to effective pre-planning, H-E-B adapted its activities in the light of new information. The adaptive and formal capability of communication played a central role. From January, H-E-B maintained regular, often daily, contact with

its suppliers around the world, to ensure that their supply chains could adapt. At the same time, H-E-B investigated how the initial spread of the pandemic in China was affecting retailers there and adjusted its approach accordingly (e.g., by enhancing hand sanitation and social distancing procedures). The aim was to learn quickly, so that H-E-B could get ahead of the pandemic before it spread to the U.S.

In terms of the adaptive and informal element of resilience, the H-E-B case illustrates the value of effective leadership and culture. Staff health was prioritized by H-E-B's leadership, in terms of protecting staff from the virus and through the maintenance of good working conditions. Store hours were reduced (slightly) to give staff more time to put product on the shelves. In addition, head office staff were encouraged to work in stores and warehouses to help ease the pressure (hundreds volunteered to do so) and frontline staff were paid an additional U.S.\$2 an hour hazard pay. The sick leave policy was also enhanced for staff forced to self-isolate and stocks of essential household items (toilet roll, cleaning products, dried/tinned goods, etc.) were maintained for staff unable to access stores during working hours. Medical advice and support was provided to staff. These measures, plus a culture that emphasized having fun at work, helped to maintain staff morale and provide them with the stable platform they needed to continue to take care of the chain's customers.

One final adaptive and informal capability exhibited by H-E-B was an emphasis on community (social networks within and beyond the organization). H-E-B recognized the essential nature of the services it provides and the importance of being a beacon of stability within the localities that it serves. Its customers have learned that they can rely on the supermarket to provide the goods and services they need. Equally important is the workplace community, where staff feel supported by their employer and proud to work for a respected local retailer. Furthermore, community is maintained with suppliers through regular communication and long-term/fair supply contracts.

By maintaining a strong sense of community H-E-B was further able to reinforce its communication networks and ability to adapt to change. Staff, suppliers, and customers all provided valuable information that the supermarket was able to use to refine and change its planning, as necessary. Few financial services organizations can lay claim to a similar strong sense of community. Though with stakeholder engagement and communication as effective as H-E-B's, there is no reason why they could not create equally strong communities within their employee and customer bases.

4. CONCLUSION

Operational resilience is a journey, not a destination. Events such as the COVID-19 pandemic provide us with valuable opportunities to learn, so that financial (and non-financial) services organizations can improve their ability to plan for and adapt to future challenging conditions.

In terms of the future and the next transboundary crisis, nothing is certain, but we can be sure that those able to adapt and exploit this uncertainty will thrive. In this context, financial services organizations need to rethink operational resilience, seeing it less as a mechanism to return to “normal” and more as a diverse set of capabilities that help them adjust their sails to whichever direction the winds of change may blow. Fair winds and following seas are not as common as they used to be.

Discussions about operational resilience are not just for times of crisis. Neither should they be the preserve of senior

management or risk specialists. As highlighted by the case of H-E-B, resilience comes from the bottom-up, as well as the top-down. Top-down planning and coordination must reinforce, not restrict, grassroots knowledge and expertise. Often, it is those on the ground that have the best perspective on a crisis and how to respond to it. But they can only do this effectively if they are supported by organizational capabilities that blend planning and adaptation with formal and informal control mechanisms. In a world of automated, process driven, compliance focused financial services, grassroots knowledge and experience are in increasingly short supply. Yet, if financial services organizations are to remain resilient in the face of 21st century crises, they must find a way to rekindle such knowledge and expertise. They must also engage with other stakeholders, such as customers, market counterparties, and regulators to create communities that work together in the face of uncertainty and which emerge stronger than ever before.

REFERENCES

- Annarelli, A., and F. Nonino, 2016. Strategic and operational management of organizational resilience: current state of research and future directions,” *Omega* 62, 1-18
- Arghandeh, R., M. Brown, A. Del Rosso, G. Ghatikar, E. Stewart, A. Vojdani, and A. von Meier, 2014. “The local team: leveraging distributed resources to improve resilience,” *IEEE Power and Energy Magazine* 12:5, 76-83
- Barasa, E., R. Mbau, and L. Gilson, 2018, “What is resilience and how can it be nurtured? A systematic review of empirical literature on organizational resilience,” *International Journal of Health Policy and Management* 7:6, 491
- Bhamra, R., S. Dani, and K. Burnard, 2011, Resilience: the concept, a literature review and future directions,” *International Journal of Production Research* 49:18, 5375-5393
- Boin, A., 2019, “The transboundary crisis: why we are unprepared and the road ahead,” *Journal of Contingencies and Crisis Management* 27:1, 94-99
- Boin, A., and M. J. Van Eeten, 2013, “The resilient organization,” *Public Management Review* 15:3, 429-445
- Comfort, L. K., Y. Sungu, D. Johnson, and M. Dunn, 2001, “Complex systems in crisis: anticipation and resilience in dynamic environments,” *Journal of Contingencies and Crisis Management* 9:3, 144-158
- Darkow, P. M., 2019, Beyond “bouncing back”: towards an integral, capability-based understanding of organizational resilience,” *Journal of Contingencies and Crisis Management* 27:2, 145-156
- Forbes, 2019, America’s largest private companies, <https://bit.ly/39Xh2tV>
- Goparth, G., 2020, “The Great Lockdown: worst economic downturn since the Great Depression,” *IMF Blog*, <https://bit.ly/2YTwn8B>
- Harris, L. M., E. K. Chu, and G. Ziervogel, 2018, “Negotiated resilience,” *Resilience* 6:3, 196-214
- ICAEW, 2020, “Coronavirus: introducing reverse stress testing,” *Institute of Chartered Accountants in England and Wales*, <https://bit.ly/3cWj0wu>
- Koronis, E., and S. Ponis, 2018, “Better than before: the resilient organization in crisis mode,” *Journal of Business Strategy* 39:1, 32-42
- Lengnick-Hall, C. A., T. E. Beck, and M. L. Lengnick-Hall, 2011, “Developing a capacity for organizational resilience through strategic human resource management,” *Human Resource Management Review* 21:3, 243-255
- Linnenluecke, M. K., 2017, “Resilience in business and management research: a review of influential publications and a research agenda,” *International Journal of Management Reviews* 19:1, 4-30
- Masten, A. S., and J. Obradović, 2006, “Competence and resilience in development,” *Annals of the New York Academy of Sciences* 1094:1, 13-27
- Meyer, A.D., 1982, “Adapting to environmental jolts,” *Administrative Science Quarterly* 27, 515-537
- Moura, J., and D. Hutchison, 2020, “Fog computing systems: state of the art, research issues and future trends, with a focus on resilience,” *Journal of Network and Computer Applications* 169, 102784
- Ponomarov, S. Y., and M. C. Holcomb, 2009, Understanding the concept of supply chain resilience,” *The International Journal of Logistics Management* 20:1, 124-143
- Power, M., 2007, *Organized uncertainty: designing a world of risk management*, Oxford University Press
- Power, M., 2016, *Riskwork: essays on the organizational life of risk management*, Oxford University Press
- Solomon, D., and P. Forbes, 2020, “Inside the story of how H-E-B planned for the pandemic,” *Texas Monthly*, March 26, <https://bit.ly/3tDE8xv>
- Sutcliffe, K. M., and T. J. Vogus, 2003, “Organizing for resilience,” in Dutton, J. E., R. E. Quinn, and K. Cameron (eds.), *Positive organizational scholarship: foundations of a new discipline*, Berrett-Koehler Publishers
- Tisch, D., and J. Galbreath, 2018, “Building organizational resilience through sensemaking: the case of climate change and extreme weather events,” *Business Strategy and the Environment* 27:8, 1197-1208
- Vogus, T. J., and K. M. Sutcliffe, 2007, “Organizational resilience: towards a theory and research agenda,” in 2007 IEEE International Conference on Systems, Man and Cybernetics, 3418-3422
- Vogus, T. J., N. B. Rothman, K. M. Sutcliffe, and K. E. Weick, 2014, “The affective foundations of high reliability organizing,” *Journal of Organizational Behavior* 35:4, 592-596
- Weick, K. E., and K. H. Roberts, 1993, “Collective mind in organizations: heedful interrelating on flight decks,” *Administrative Science Quarterly* 38:3, 357-381
- Weick, K. E., and K. M. Sutcliffe, 2001, *Managing the unexpected* (vol. 9), Jossey-Bass
- Weick, K. E., K. M. Sutcliffe, and D. Obstfeld, 1999, “Organizing for high reliability: processes of collective mindfulness,” *Research in Organizational Behavior* 21, 81-124
- Wildavsky, A., 1988, *Searching for Safety*, Transaction Books
- Williams, A., 2020, “IMF slashes economic outlook and warns of public debt burden,” *Financial Times*, June 24, <https://on.ft.com/3p3mf0h>
- WEF, 2020, *Global Risk Report 2020*, World Economic Forum, January 15, <https://bit.ly/39WQLfb>

© 2021 The Capital Markets Company (UK) Limited. All rights reserved.

This document was produced for information purposes only and is for the exclusive use of the recipient.

This publication has been prepared for general guidance purposes, and is indicative and subject to change. It does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (whether express or implied) is given as to the accuracy or completeness of the information contained in this publication and The Capital Markets Company BVBA and its affiliated companies globally (collectively "Capco") does not, to the extent permissible by law, assume any liability or duty of care for any consequences of the acts or omissions of those relying on information contained in this publication, or for any decision taken based upon it.

ABOUT CAPCO

Capco is a global technology and management consultancy dedicated to the financial services industry. Our professionals combine innovative thinking with unrivalled industry knowledge to offer our clients consulting expertise, complex technology and package integration, transformation delivery, and managed services, to move their organizations forward.

Through our collaborative and efficient approach, we help our clients successfully innovate, increase revenue, manage risk and regulatory change, reduce costs, and enhance controls. We specialize primarily in banking, capital markets, wealth and asset management and insurance. We also have an energy consulting practice in the US. We serve our clients from offices in leading financial centers across the Americas, Europe, and Asia Pacific.

WORLDWIDE OFFICES

APAC

Bangalore
Bangkok
Gurgaon
Hong Kong
Kuala Lumpur
Mumbai
Pune
Singapore

EUROPE

Berlin
Bratislava
Brussels
Dusseldorf
Edinburgh
Frankfurt
Geneva
London
Munich
Paris
Vienna
Warsaw
Zurich

NORTH AMERICA

Charlotte
Chicago
Dallas
Hartford
Houston
New York
Orlando
Toronto
Tysons Corner
Washington, DC

SOUTH AMERICA

São Paulo



WWW.CAPCO.COM



CAPCO